

Public Abstract

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Title:Characterization of progesterone receptor (PGR) mRNA and protein isoforms in the endometrium of cyclic and pregnant pigs

Disappearance of progesterone receptor (PGR) from the surface epithelium of the uterus is essential for cyclicity and pregnancy in pigs. In humans, three forms of PGR mRNAs (PGR-A, PGR-B and PGR-C) exist, conferring distinct biological functions. The objective was to identify PGR mRNA and protein forms in the pig uterus during the estrous cycle and pregnancy. Porcine PGR mRNA is 4.3 kb and 84% identical to human PGR. Porcine PGR protein is 934 amino acids and 84% identical to human PGR. A tendency for PGR-B mRNA expression to be increased on day 0 (d 0) and d 5 compared with d 7.5 and d 15 was detected. As in humans, there were three PGR mRNA forms in pigs, PGR-B, PGR-A and PGR-C. The presence of protein forms PGR-B and PGR-A were confirmed, but PGR-C protein was not detected. Overall PGR-B and PGR-A protein abundance did not differ between d 0, d8 and d 12 of the cycle. The PGR-B protein had strong nuclear staining in epithelial cells, with decreasing intensity from d8 to d 12, while PGR-A had no nuclear staining in the epithelium and sporadic nuclear staining in the stroma. We conclude abundance of PGR mRNA forms and location of protein forms in the uterus change during the estrous cycle and pregnancy, potentially leading to functional differences in PGR action and pig fertility.